

PATENT COOPERATION TREATY

REC'D 04 APR 2005

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From the
INTERNATIONAL SEARCHING AUTHORITY

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To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/IB2004/052624

International filing date (day/month/year)
01.12.2004

Priority date (day/month/year)
04.12.2003

International Patent Classification (IPC) or both national classification and IPC
B06B1/06

Applicant
KONINKLIJKE PHILIPS ELECTRONICS N.V.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/IB2004/052624

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/IB2004/052624

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	6,7,16-19,23
	No: Claims	1-5,8-15,20-22,24-27
Inventive step (IS)	Yes: Claims	6,7,16-19,23
	No: Claims	1-5,8-15,20-22,24-27
Industrial applicability (IA)	Yes: Claims	1-27
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Reference is made to the following documents:

D1: US 2002/087083 A1 (NIX ELVIN LEONARD ET AL) 4 July 2002 (2002-07-04)

D2: US-B1-6 618 916 (EBERLE MICHAEL J ET AL) 16 September 2003 (2003-09-16)

2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

The document D1 discloses (the references in parentheses applying to this document) an ultrasound transducer probe (see fig.1) comprising :

- a support substrate having a non linear surface (see paragraph 6);
- an integrated circuit physically coupled to the support substrate overlying the non-linear surface, wherein said integrated circuit substantially conforms to a shape of the non-linear surface (see fig.4 and paragraphs 35, 50 and 51); and
- an array of piezoelectric elements coupled to said integrated circuit (see paragraph 43).

3. The same reasoning applies, mutatis mutandis, to the subject-matter of the corresponding independent system and method claims 20 and 21 which therefore are also considered not new.

Note : It is noted that independent claims 1,20,21 are also not new with regard to document D2 (see passages cited in the search report) which is considered to be just as equally relevant as D1.

4. Document D1, which is considered to represent the most relevant state of the art, discloses an ultrasound probe from which the subject-matter of claim 16 differs in that the integrated circuit includes an active region and a passivation layer overlying the active region, wherein a thickness of said integrated circuit and a thickness of the passivation

layer are selected to assure that neutral fibers of a bend structure coincide with the active region of said integrated circuit.

The subject-matter of claim 16 is therefore new (Article 33(2) PCT).

The problem to be solved by the present invention may be regarded as a desire to design a no-stress region of a bend structure which coincides with the active region of the integrated circuit portion.

The solution to this problem proposed in claim 16 of the present application is considered as involving an inventive step (Article 33(3) PCT) since none of the document cited in the search report (alone or in combination with another) disclose or suggest the selection of a thickness of the passivation layer related to the thickness of the integrated circuit portion in order to provide a location of "neutral fibers" in the region of the active circuit layers.

5. Dependent claims 2-5,8-15,22 and 24-27 do not appear to contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, see documents and the corresponding passages cited in the search report.